



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/561,574	01/26/2007	Nicholas S. Arini	PA0363	5871

22840 7590 10/06/2010
GE HEALTHCARE BIO-SCIENCES CORP.
PATENT DEPARTMENT
101 CARNEGIE CENTER
PRINCETON, NJ 08540

EXAMINER

BITAR, NANCY

ART UNIT	PAPER NUMBER
----------	--------------

2624

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

10/06/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

LSUSPatents@ge.com

Office Action Summary	Application No. 10/561,574	Applicant(s) ARINI ET AL.	
	Examiner NANCY BITAR	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 September 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,5-34 and 37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-34 and 37 is/are rejected.
- 7) ☐ Claim(s) 17-19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's response to the last Office Action, filed 6/28/2010, has been entered and made of record.
2. Applicant has amended claims 1, 9, 33, 34. Claims 3, 4, 35, 36 have been cancelled. Claim 37 have been added. Claims 1-2, 5-34, and 37 are currently pending.
3. Applicant's arguments, in the amendment filed 9/21/2007, with respect to the rejections of claims 1-36 under 35 U.S.C. 103(a) have been fully considered but are moot in view of the new ground(s) of rejection necessitated by the amendments. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Hal et al (EP 0401077)

Examiner Notes

4. Examiner cites particular columns and line numbers in the references as applied to the claims below for the convenience of the applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested that, in preparing responses, the applicant fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner.

Application/Control Number: 10/561,574
Art Unit: 2624

Page 3

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-2, 5-34, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barker et al (US 5,347,139) in view of Hal et al (EP 0401077)

As to claims 1-2 Barker et al teaches the method of analyzing a plurality of biological entities using an imaging apparatus, the method comprising:

a)acquiring a first image of the biological entities (exposing a first radiation storage phosphor material to said substrate containing said tagged target substances and said standards, thereby creating a latent image on said first radiation storage phosphor material, column 2 lines 1-30)

b) adding a marker to said plurality of biological entities after the first image is acquired , said marker being capable of identifying objects within said plurality of biological entities when detected using the imaging apparatus, (The first exposure, image 1, is of the sample directly on the phosphor screen. The second exposure, image 2, is made with the appropriate absorption material between the sample and screen. Both images are captured. By using simultaneous equations isotope contributions of each label can be determined, see abstract; see also claim 10);

Art Unit: 2624

c) recording a marked-up image in which spatial definitions of said objects are identifiable from said marker (claim 10);

While Barker meets a number of the limitations of the claimed invention, as pointed out more fully above, Barker fails to specifically teach generating a spatial definition for an object in said first image using data derived from said marked-up image.

Hal et al teaches removing background and noise from images to generate dynamic spatial information of labeled objects, relying on the comparison and subtraction of sequentially recorded images [(column 4, lines 33-48); (column 18 lines 18-44, and lines 25-51)] it would have been obvious to one skilled in the art to generate spatial definition by using the data derived from the second marked image as taught by Hal et al in order to minimize the time/labor effort invested for generating a spatial definition of the biologic entitle.. Therefore, the claimed invention would have been obvious to one of ordinary skill in the art at the time of the invention by applicant.

As to claim 2, Hal teaches the method of claim 1 further comprising acquiring an initial series of images before adding a marker and recording a marked up image and applying the spatial definition to the initial series of images to enable an operator to evaluate changes in the object over time (column 4 lines 33- column 5 lines 1-40; column 19 lines 30-51).

As to claims 5-6, Barker et al teaches the method of claim 1, wherein said marker has a temporally-varying signal and is provided by a genetic construct system(column 2 lines 1-30) .

The limitation of claims 7 and 8 has been defined by Hal et al (column 19 , lines 30-51)

As to claim 9, Barker et al teaches the method of claim 1, further comprising: e) recording a further image concurrently with the marked up image and (column 2 lines 3-30). f) deriving spatial definition data from said further image, and in step d), analyzing said first image using the data derived from the further image (Hal et al claim 16

As to claims 10-11 , Hal et al teaches the method of claim 9, wherein said further image is recorded in a first color channel and said marked-up image is recorded in a second, different color channel (column 19, lines 30-51).

As to claim 12, Hal et al teaches the method of claim 9, further comprising, in step f), deriving data from said further image using data derived from said marked-up image (comparing two data images, column 18 lines 14-44).

As to claim 13, Hal et al teaches the method of claim 9, wherein the data derived in step f) comprises a value or values of one or more characteristics associated with the object (claim 17) .

As to claim 14, Hal et al teaches the method of claim 13, wherein the one or more characteristics include at least one selected from the group consisting of a mean intensity, a standard deviation, a variance, a kurtosis, an auto-correlation function, a spatial correlation measure, a textual correlation measure, an auto correlation function, a fractal dimension, an area, a perimeter, a length of a principle axis, a width of a principle axis, a compactness and an orientation (claim 16).

The limitation of claims 15-16 is being addressed in Hal et al column 19 lines 30-58.

As to claim 20, Hal et al teaches the method of claim 1, further comprising repeating step d) to generate a plurality of spatial definitions for a plurality of objects in said first image (column 18 lines 25-51) .

As to claim 21, Barter et al teaches the method of claim 20, wherein the plurality of generated spatial definitions is filtered according to a quality criterion (column 2 lines 4-30).

The limitation of claims 22-34,37 has been addressed above.

Claim Objections

7. Claims 17-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

Art Unit: 2624

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NANCY BITAR whose telephone number is (571)270-1041. The examiner can normally be reached on Mon-Fri (7:30a.m. to 5:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vikkram Bali can be reached on 571-272-7415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Nancy Bitar/

Application/Control Number: 10/561,574

Page 9

Art Unit: 2624

Examiner, Art Unit 2624

/Wes Tucker/

Primary Examiner, Art Unit 2624